

*Life for two weeks on the mountaintops would show up many things about life during the other fifty weeks down below. —Benton Mackaye*

## Findings

- A growing population, accelerating land development, increasing transportation costs and public health concerns increase demand for trails and greenways close to home. One-quarter of the 20 most popular recreational activities in Virginia take place on trails.
- Studies indicate that trails have large, long-term economic benefits in both rural and urban areas.
- The growing complexity of trails and greenways demands better agency coordination and a defined, strategic approach from state and regional planners.
- A priority of the state trail program is to facilitate the development of state and regional, long-distance, multi-jurisdictional trunkline trails.
- Most localities report that they do not have an approved plan for trails outside of Virginia Department of Transportation (VDOT) right-of-way. Although most planning districts and some counties have developed a plan for bicycle or pedestrian facilities within VDOT right-of-way, implementation has not occurred in many areas.
- Trail planners need access to a comprehensive statewide inventory of existing, planned and proposed trail opportunities, and the public needs more information about existing trails.
- There is a need at all levels of government to plan for a system of trails and greenways that provide a variety of leisure experiences to help avoid user conflict, connect gaps in the trail system, and attract new users. Trail design standards should provide for a range of trail experiences and types, and allow for an appropriate range of risk levels.
- There is a pervasive need for additional funds for trail planning, construction, marking, maintenance and promotion, and a particular need for funds to develop trail systems along corridors outside of VDOT rights-of-way.
- Opportunities for trails exist along many rail corridors in Virginia, but there is no process for accom-

modating recreational use of railroad property for trail crossings or trails that parallel rails.

- Uniform signage using a consistent trail assessment system will help users negotiate trails, particularly those that cross jurisdictional boundaries, and help promote trail use and identity.

## Recommendations

- Local governments should have a greenways and trails component in their comprehensive plan that provides for a variety of leisure trail experiences and promotes pedestrian and bicycle transportation alternatives.
- DCR should establish an institutional framework to support the implementation of the 2007 *Virginia Outdoors Plan* (2007 VOP) to include staff support and the re-establishment of a greenways and trails advisory committee to help develop a strategic plan for the state greenways and trails program.
- DCR should establish a state trails inventory and partner with Virginia Tourism Corporation to both promote these trails on their website and evaluate their economic impacts.
- State, regional and local governments should include funds for trail development, management and maintenance in annual capital and operating budgets, and seek creative ways to provide incentive funding for trail development.
- State, regional and local governments should strengthen the public's understanding of the connection between trails and public health and establish policies that support pedestrian and bicycle facilities in road construction and development and redevelopment projects.
- DCR should partner with planning district commissions and regional commissions to a) facilitate communications between trail providers, users and policy makers, b) encourage the private sector to improve regional and statewide trail opportunities and support, and c) focus on regional trail networks to establish a trunkline statewide trail system.

## Trails and Greenways

- DCR should work with local governments and trail sponsors to determine the final alignments and plans for major trunkline trail networks and to facilitate the adoption of these corridors in local comprehensive plans. Trunkline trails include the Trans-Virginia Southern Trail, East Coast Greenway, Potomac Heritage National Scenic Trail, Great Eastern Trail, and James River Heritage Trail.
- DCR should partner with VDOT and the Virginia Department of Rail and Public Transportation (DRPT) to develop a process for negotiating with rail companies to provide opportunities for trails along and across rail corridors.
- DCR should adopt and disseminate a uniform trail assessment system and coordinate the development of standard sign templates. This will help users negotiate multi-jurisdictional trails and encourage private and government entities to promote a consistent brand.
- Local and regional trail managers should provide information about their trail at trailheads, in brochures and on websites so users can choose sections within their skill and capability levels.

### Introduction

The greenways and trails movement has evolved through four distinct phases in the past century. Initially greenways were conceived as boulevards and parkways for scenic drives by carriage or car, like the Skyline Drive, Monument Avenue in Richmond or the Colonial Parkway connecting Williamsburg to Yorktown. The greenway was the scenery one passed en route to a destination, or the excuse for a Sunday drive. This social occasion allowed generally passive users to enjoy the view as they spent time together.

The idea of a trailway, which later evolved to greenway, was embraced by the Appalachian Trail Conference in 1937, and referred to an area dedicated to the interests of those on foot. Originally a mile on either side of the trail, this idea of a greenway was the broad swath of protected land that served as a buffer from the sights and sounds of civilization. The greenway provided an escape from civilization and an opportunity for spiritual growth and emotional healing as hikers tested their physical strength and endurance. Today, many hikers are challenged and enriched as they follow the scenic mountain corridors that have been preserved along this greenway through Virginia.

More recently, the idea of a greenway has been adapted for multi-purpose urban infrastructure, with narrower corridors that still serve to buffer and shade a variety of trail users on bikes, horses and skates, as well as on foot. The East Coast Greenway, proposed to span almost 3,000 miles from Maine to Florida, aims to connect all the major cities of the East Coast along a continuous, off-road path. The rails-to-trails movement has created a nationwide network of these multi-purpose trails from former rail lines. There are nearly 300 miles of rail-to-trail corridors in Virginia, including the 57-mile New River Trail in Southwestern Virginia and the 45-mile Washington and Old Dominion Trail in Northern Virginia. This concept of greenway includes the trail and the right-of-way through which it passes, generally less than 100 feet in width. Users may be seeking exercise, social opportunities or a chance to enjoy nature when they carve time for this active recreation out of their busy schedules.

Today, greenways capture all of these former uses as part of metropolitan networks and mega-trails that link to recreational areas, natural areas and other open space lands. Often used for both active and passive recreation, as well as transportation, the greenway is also a tool for linking conservation lands as part of an



*Walking for pleasure at Douthat State Park. Photo by Nancy Sorrells.*

extensive green infrastructure network. A greenway's ecological functions—buffering storm and flood waters, and providing migration routes for wildlife—are often the primary incentives for greenway development. A sustainable transportation system, where most people walk or bicycle to destinations, relies upon the development of extensive greenway networks, particularly in urban areas. A good example of this type of network is the Potomac Heritage National Scenic Trail (PHNST), a partnership to develop and maintain a system of trails for recreation, transportation, health and education. The PHNST connects outstanding natural and cultural features along a 700-mile corridor of the Potomac River, from the Chesapeake Bay to the Allegheny Highlands.

Virginia is very fortunate to possess such excellent examples of greenways for citizens to enjoy. Those who use these greenways appreciate their value—for the environment, as well as transportation, exercise, education and ecotourism. However, social values are best expressed as greenways and trails become part of daily life, used routinely as a means of accessing community resources, with people heading to work or play, and friends and neighbors exchanging greetings. This social interaction and activity along the trail creates a sense of community, a real commodity in the transient yet sedentary modern world.

Greenways and trails play an important role in building public support for green infrastructure planning. Accelerating issues related to chronic disease, transportation, and air and water quality fuel widespread demand for these linear corridors. Recreation is also driving demand, because people want facilities that not only allow families to spend leisure time together, but are also available and convenient at all times of the day. The 2006 *Virginia Outdoors Survey (VOS)* confirms that walking for pleasure is the most popular recreational pursuit in the state. This ranking is based on percentage of households participating (72 percent). Visiting natural areas (44 percent), jogging (24 percent), bicycling (21 percent), hiking/backpacking (16 percent), nature study, horseback riding and fitness trail use were within the top 30 activities.

A 2003 Roper survey reported the most popular recreation activity nationwide is walking for fitness or recreation; bicycling, jogging and hiking all fell within the ten most popular activities. This survey also reported an interesting correlation between recreation participation and environmental attitudes, with those most concerned about the environment being especially active in recreation. By providing space for popular outdoor activities, greenways and trails create the

means for citizens to experience the out-of-doors and get in touch with nature, in turn building support for natural resource conservation.

### **Greenways are important because...**

- Connecting homes to shops and offices is good for businesses and convenient for customers.
- Fewer cars mean fewer crowded roads and less air pollution.
- Trails, natural views and green spaces attract homebuyers.
- Walking on pathways is healthy for both the body and the mind.
- People out walking promote community awareness while deterring crime.
- Trails cost less to build and maintain than many other recreational facilities, and can benefit everyone.
- The whole family may participate, while enjoying each other's company and the outdoors.

*Source: Chesterfield County, Virginia brochure*

### **Economic benefits of greenways and trails**

The U.S. Forest Service and the University of Georgia report that Virginia Creeper Trail (VCT) users spent about \$2.5 million over the sample period (2003-2004) related to their recreation visits along this 35-mile scenic trail in rural southwestern Virginia. Of this amount, nonlocal visitors spent about \$1.2 million directly in the Washington and Grayson county economies. This nonlocal visitor spending in the area generated \$1.6 million in economic impacts and supported close to 30 jobs.

Although access to the VCT is “free,” there is substantial economic value to recreation visitors from access to the trail. Using conventional economic methods, it was determined that the net economic benefit to users of the VCT is between \$23 and \$38 per person, per trip. These values can be aggregated across the estimated 100,870 primary-purpose trips per year, leading to an estimated range of between \$2.3 million and \$3.9 million in net economic benefits to VCT users. (Bowker et al, 2004)



Cyclists enjoy the trails around Richmond. Photo by Bill Swann.

In the urbanized area of Northern Virginia, the estimated 1.7 million adult users of the 45-mile Washington and Old Dominion Trail (W&OD), spent \$12 million annually on expenses related to their recreational use of the trail. The estimated \$1.4 million in nonlocal spending generated about \$1.8 million in local economic impacts, supported 34 full-time job equivalents, and generated about \$642,000 in personal income. The annual net economic benefit of trail access to users was between \$14.4 and \$21.6 million, and the vast majority of these net economic benefits accrue to northern Virginia residents. (Bowker et al, 2004)

The National Park Service reports through *Economic Impacts of Protecting Rivers, Trails, and Greenway Corridors* and *The Impact of Rail-Trails* that there are various and numerous benefits to trail users, local landowners and trail communities. Although legitimate issues and concerns may be raised at the onset of many trail projects, studies indicate that such apprehensions are unwarranted. Residents and visitors of trail communities enjoy the benefits of trail use, along with aesthetic beauty, protected open space, and in some instances, higher property resale values typically found adjacent to trails.

### **Economic benefits of greenways**

#### ***Real property values***

Many studies demonstrate that parks, greenways and trails increase nearby property values, thereby increasing local tax revenues that offset greenway acquisition costs.

#### ***Expenditures by residents***

Spending by local residents on greenway-related activities helps support recreation-oriented businesses and employment, and all other businesses patronized by greenway and trail users.

#### ***Commercial users***

Greenways often provide business opportunities for commercial activities such as equipment rentals and sales, lessons, and other recreation-related businesses.

#### ***Tourism***

Greenways are often major tourist attractions, generating expenditures on lodging, food and recreation-oriented services, while improving the overall appeal of a community to tourists and prospective residents.

#### ***Agency expenditures***

The agency responsible for managing a river, trail or greenway can support local businesses by purchasing supplies and services. Jobs created by the managing agency may also help increase local employment opportunities.

#### ***Corporate relocation and retention***

Evidence shows that the quality of life within a community is an increasingly important factor in corporate relocation decisions because it is important to employees. Greenways are often cited as important contributors to quality of life in a community.

#### ***Public cost reduction***

The conservation of rivers, trails and greenways helps local governments and other public agencies reduce costs resulting from flooding and other natural and man-made hazards. The high cost of chronic disease is a major contributing factor to exploding healthcare costs. Exercising on trails and greenways helps prevent these diseases.

#### ***Intrinsic value***

While greenways have many economic benefits, it is important to remember the intrinsic environmental and recreation value of making social and physical connections while preserving rivers, trails and other open space corridors.

Source: Adapted from *Economic Impacts of Protecting Rivers, Trails, and Greenway Corridors*; National Park Service, 1995.

## Trail survey findings

A February 2006 survey was sent to local governments and planning district commissions for feedback on trail issues and problems. Survey results (see Appendix E) indicate that a lack of funding is the biggest challenge for trail planners, although difficulty acquiring the corridor and a general lack of political support were also problematic. For trail managers, a lack of funding for trail maintenance was clearly the biggest problem. For trail users, planning districts report that no trails close to home is the major problem. However, local governments report the largest problem is a lack of information on trails. Respondents to a 2006 survey by BikeWalk Virginia also reported that there was inadequate sharing of trail-related information, and the most sought-after user information was trail maps.

## Statewide and regional trail systems

Asked to rank their organization's top need for trails, both regional planners and local governments responded that connected regional trail systems were most important. Local, regional and state planners should work together to realize this common goal. A combined effort is needed to mediate issues that arise when trails cross jurisdictional boundaries, to provide bicycle and pedestrian infrastructure (including signage and amenities) and to get information out to the public.

### **Proposed statewide trunkline trails**

The East Coast Greenway ([www.greenway.org](http://www.greenway.org)), the Trans-Virginia Southern Trail, the Potomac Heritage National Scenic Trail ([www.nps.gov/pohe](http://www.nps.gov/pohe)), the Great Eastern Trail ([www.greateastertrail.org](http://www.greateastertrail.org)) and the James River Heritage Trail are five regional trail systems being developed to feature off-road facilities. These proposed and planned trail networks are made up of many existing, locally-managed trails. See the trail map for the general locations of these trunkline networks and a list of their existing components.

The Potomac Heritage National Scenic Trail (PHNST), a unit of the National Park System, has been the target of significant investments in funds, time and expertise by individuals, organizations and government agencies over the past ten years. The PHNST corridor in Virginia generally follows the Potomac between the Chesapeake Bay and a portion of Harpers Ferry National Historical Park. With the completion of *A Development and Management Plan for the Potomac Heritage National Scenic Trail in Virginia* (February 2006) and *A Concept Plan for the Potomac Heritage National Scenic Trail in Virginia's Lower Potomac Region* (March 2006), the stage is set to complete a

braided trail network connecting a range of opportunities for boating, hiking, bicycling and equestrian activities throughout the corridor.

The planned Great Eastern Trail network will link existing trails from central Alabama to central New York. The Southeast Foot Trails Coalition and the Mid-Atlantic Foot Trails Coalition are undertaking this project formerly known as the Atlantic Crest Trail, which is being sponsored by the American Hiking Society. A major segment, the Tuscarora Trail, remains unprotected. One-third of this 250-mile trail, in a sparsely populated area of the Appalachian Mountains, passes through private property and along road shoulders.

The Trans-Virginia Southern Trail will stretch east to west from the Cumberland Plateau to the Chesapeake Bay. Comprised of many trails existing or underway, this network will connect the mountains to the sea and stimulate ecotourism across Southern Virginia. The proposed Tobacco Heritage Trail will form the central piece of this network through five counties.

Stretching north to south, The East Coast Greenway will make use of waterfront esplanades, canal paths, railroad corridors and park paths for cyclists, hikers, skaters, equestrians and people with disabilities as it connects the urban crescent to suburban and rural America. The East Coast Greenway has a "close the gaps" strategy of connecting existing trails, parks, neighborhoods and historic sites. The ECG Historic Coastal Route is an east-west alternate route utilizing the Virginia Capital Trail that will connect Richmond with Virginia Beach and Wilmington, NC.

The James River Heritage Trail is proposed to follow America's Founding River from the Chesapeake Bay to the foothills of the Appalachian Mountains. The trail follows the old Kanawha Canal towpath, park trails, scenic riverside roadways and urban riverfront trails deep into the heart of Virginia.

There are other trunkline trail systems that share road right of way. Virginia is home to more of the United States Numbered Bicycle Route system than any other state. Since both USBR 1 and USBR 76 cross the state, Virginia hosts about 41 percent of the total USBR system. USBR 1 crosses the state north-south from Arlington to the North Carolina border near Kerr Reservoir, and USBR 76 crosses east-west from Yorktown to the Kentucky border in Dickenson County. AASHTO, the American Association of State Highway and Transportation Officials, officially recognizes these federal routes. These routes are shown on VDOT's official county maps, and signed in the field.

## Trails and Greenways

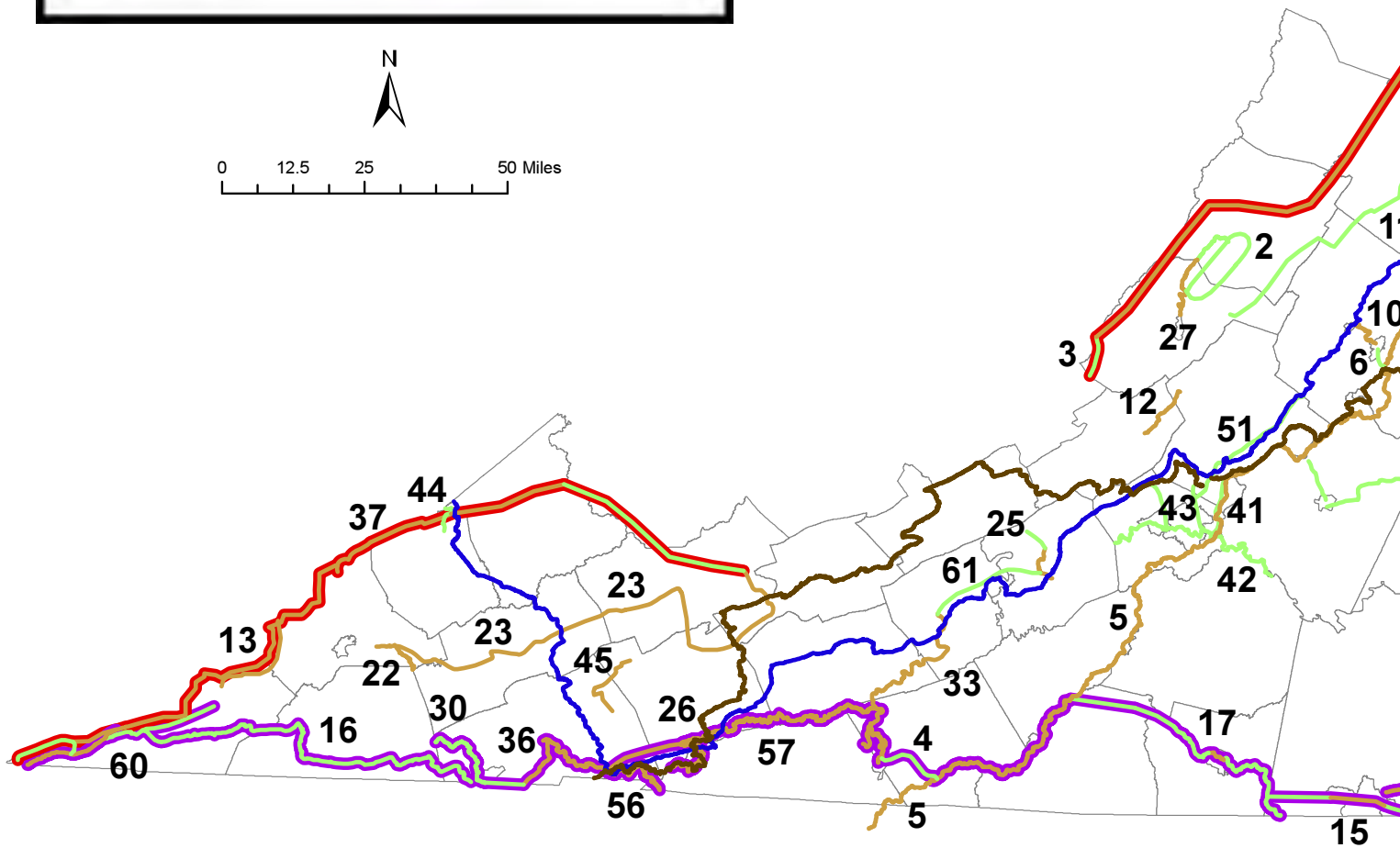
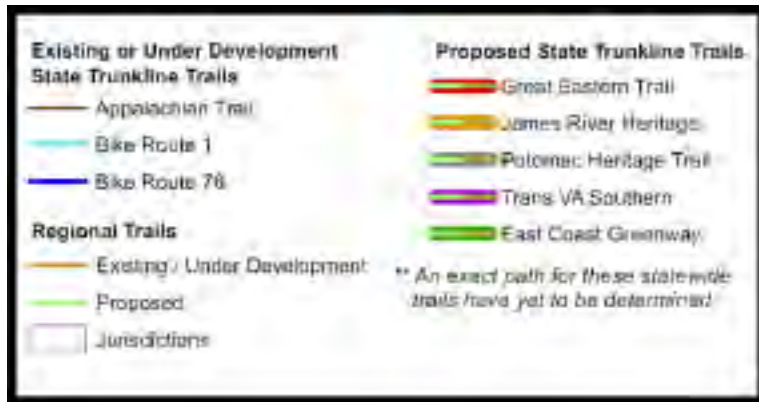
In addition, Virginia also hosts parts of four other long-distance bicycle routes documented by Adventure Cycling Association, a nonprofit organization dedicated to bicycle travel. The Trans-America Bicycle Trail crosses the country from Oregon to Virginia, and shares the same alignment as USBR 76 in Virginia. The Maine to Virginia Bicycle Route runs approximately

150 miles from Washington, D.C. to Richmond, Virginia, generally along the same alignment as USBR 1. The Virginia to Florida Bicycle Route covers 130 miles from Richmond to the North Carolina state line at Suffolk. Virginia also holds one-half of the Tidewater Potomac Heritage route between Arlington Memorial Bridge and Reedville.

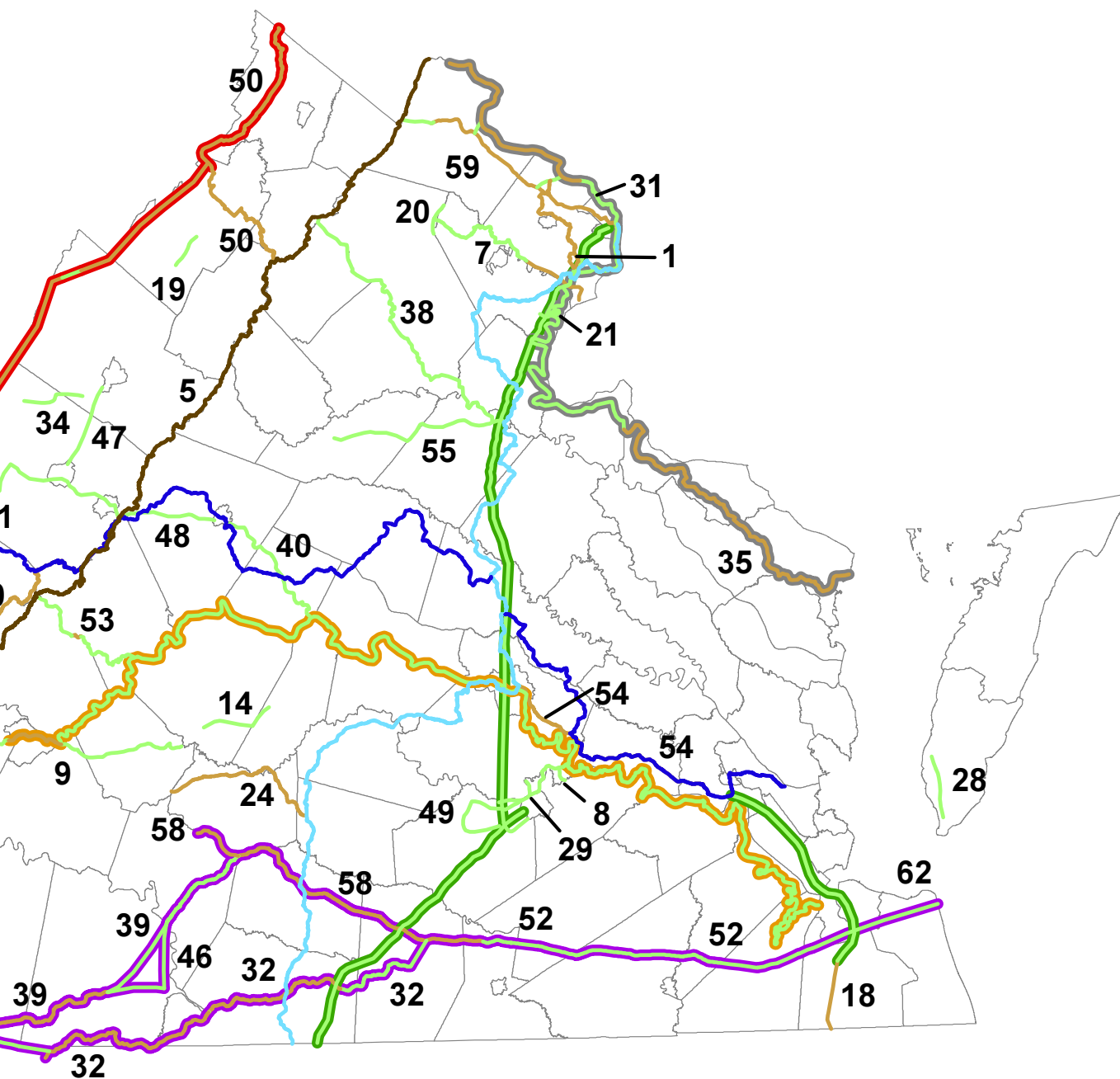
**Table VII-1. Existing and Planned Statewide Component Trail Systems**

James River Heritage Trail America's Founding River	Great Eastern Trail (formerly Atlantic Crest)
Virginia Capital Trail Richmond James River Park Trail network Richmond Canals and Riverfront Blackwater Creek Bikeway Point of Honor Trail Lynchburg RiverWalk Ivy Creek Greenway James River State Park Trails	Tuscarora Trail Mill Mountain Trail Tibbett Knob Trail (or alternate) North Mountain Trail Snyder Trail Beech Lick Knob Trail Shenandoah Mountain Trail North River Trail Tearjacket Trail Benson Run Trail Piney Mountain Trail Warm Springs Mountain Trail Muddy Run Trail Hidden Valley Trail Bogan Run Trail High Top Fire Trail Meadow Mountain Trail Allegheny Trail Cumberland Mountain Trail Pine Mountain Trail Pennington Gap Trail Russell Fork Greenway
Potomac Heritage National Scenic Trail	Trans-Virginia Southern Trail Cumberland Gap to Chesapeake Bay
Potomac Heritage Trail segments in Loudoun, Fairfax & Prince William Counties The eastern Loudoun County linear park system Riverbend Park The River Trail, portions of the Ridge Trail and Difficult Run Trail in Great Falls Park Trail alignment in Scott's Run Nature Preserve Potomac Heritage Trail in George Washington Memorial Parkway (GWMP) Mount Vernon Trail (GWMP) Potomac Heritage Trail route, Prince William Forest Park Alexandria Heritage Trail Government Island Trail Historic Falmouth-Ferry Farm Trail and connecting routes George Washington Birthplace to Mt. Vernon Trail Northern Neck bicycling routes and trails	Seaboard Coastline Trail Multi-City Bike Trail Virginia Beach Pipeline The Virginian Trail NF&D Rail Trail Staunton River Trail Richmond & Danville Rail Trail Dan River Trail Danville Riverwalk Dick and Willy Rail Trail Martinsville Uptown Rail Trail Fieldale Walking Trail Smith River Trail Mayo River Rail Trail Blue Ridge Parkway Trails Blue Ridge/New River Trail Connector New River Trail State Park Virginia Highlands Trail Iron Mountain Trail Virginia Creeper Trail Overmountain Victory Trail Mendota Trail Daniel Boone Wilderness Trail Wilderness Road Trail
East Coast Greenway	
Richmond to Raleigh S-Line Rail with Trail Tobacco Heritage Trail Bull Run Occoquan Trail Accotink Stream Valley Trail Arlington Memorial Bridge Mount Vernon Trail Virginia Capital Trail Dismal Swamp Canal Trail and Greenway	

## Map VII-1. Trails and Greenways



1. Accotink Stream Valley Trail / Fairfax Cross County Trail
2. Alleghany Highlands Trail
3. Allegheny Trail
4. Blue Ridge / New River Trail Connector
5. Blue Ridge Parkway Trails
6. Brushy Blue Greenway
7. Bull Run / Occoquan Trail Extension
8. Cabin Creek Trail
9. Central Virginia Greenway
10. Chessy Trail
11. Clifton Forge - Staunton - Waynesboro Rail with Trail
12. Craig Valley Scenic Trail
13. Cumberland Mountain Trail Extension
14. Cumberland - Appomattox Trail
15. Danville River Walk
16. Daniel Boone Wilderness Trail
17. Dick and Willy Rail Trail / Smith River Trail
18. Dismal Swamp Canal Trail and Greenway
19. Edinburgh to Mt. Jackson Rail Trail
20. Bull Run Mtn / Mill - to - Mill Trail
21. George Washington Birthplace to Mt. Vernon Trail
22. Guest River Gorge Trail
23. Heart of Appalachia Bike Route
24. High Bridge Trail State Park
25. Huckleberry Trail Extension
26. Iron Mountain Trail
27. Jackson River Scenic Trail
28. Kiptopeke to Cape Charles Trail
29. Lower Appomattox River Trail
30. Mendota Trail
31. Shenandoah Valley Rail Trail
32. Shenandoah Valley Scenic Trail
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| 31. Mt. Vernon Trail Extension                       | 47. Staunton to Harrisonburg Rail Trail              |
| 32. NF&D Rail Trail                                  | 48. Three Notched Trail                              |
| 33. New River Trail State Park                       | 49. Trekking Dinwiddie Trail                         |
| 34. North River Trail                                | 50. Tuscarora Trail                                  |
| 35. Northern Neck Heritage Trail                     | 51. Valley Rail - Trinkle Trail                      |
| 36. Overmountain Victory Trail                       | 52. Virginia Beach Pipeline                          |
| 37. Pine Mountain Trail                              | 53. Virginia Blue Ridge Railway Trail                |
| 38. Rappahannock River Heritage Trail                | 54. Virginia Capital Trail                           |
| 39. Richmond & Danville Rail Trail / Dan River Trail | 55. Virginia Central Rail Trail                      |
| 40. Rivanna River Greenway                           | 56. Virginia Creeper Trail                           |
| 41. Roanoke Lexington Horse Trail                    | 57. Virginia Highlands Trail                         |
| 42. Roanoke River Greenway                           | 58. The Virginian Trail                              |
| 43. Roanoke Valley Greenway                          | 59. W&OD Extension                                   |
| 44. Russel Fork Greenway                             | 60. Wilderness Road Trail                            |
| 45. Salt Trail                                       | 61. New River Trail Extension                        |
| 46. Staunton River Trail                             | 62. Multi-City Bike Trail / Seaboard Coastline Trail |



# Trails and Greenways

## Proposed Regional Trails

### Description

The **Wilderness Road Trail** extension will connect the developed trail between Cumberland Gap National Historical Park and the Wilderness Road State Park to Rose Hill. The trail can then be looped through the national park to rejoin the existing trail at Cumberland Gap.

The **Daniel Boone Wilderness Trail** follows Routes 23 and 58 to connect Scott and Lee counties to the states of Tennessee near Bristol and Kentucky at the Cumberland Gap. This route can become part of the Trans-Virginia Southern Trail as improvements are made to enhance user safety.

The **Southern Appalachian Greenway Alliance** is a regional network of proposed and existing trails throughout a 10-county area of Northeast Tennessee and Southwest Virginia. Major existing trails in Virginia that fall within this network include the Iron Mountain Trail, the Virginia Creeper Trail, Osbourne Ridge Loop Trail, Chief Benge Scout Trail, Back Valley Loop Trail, Wilderness Road State Park Trail, Stone Mountain Trail, Wallen Ridge Trail, Devil's Fork Loop Trail and Osbourne Ridge Trail. Major proposed trails include the Daniel Boone Wilderness Trail bike route, the Pennington Gap Trail, the Melungeon Trail, the Wilderness Road Trail extension, the Mendota Trail, and a connector from Sugar Hollow Park in Bristol to the Salt Trail and Glade Spring.

The **Mendota Trail** could connect the City of Bristol along the Old Southern Railroad to Carters Fold in Scott County.

The **Russell Fork Greenway** could connect the town of Haysi in Dickenson County to Buchanan County and on to Kentucky through Breaks Interstate Park.

When complete, the **Pine Mountain Trail** will stretch nearly 120 miles to connect Breaks Interstate Park to the Cumberland Gap National Park in Kentucky as part of the Great Eastern Trail. The section in Virginia will connect Breaks to the Pound Reservoir in Wise County.

The **Heart of Appalachia Bike Route** runs on roughly half paved/half gravel roads from Burke's Garden in Tazewell County to the Guest River Gorge in Wise County.

The **Cumberland Mountain Trail Extension** will connect the Pine Mountain Trail in Dickenson County to the Cumberland Mountain Trail in Tennessee.

The historic **Salt Trail** could connect Emory and Henry College to Glade Spring, Saltville and the Clinch Mountain Wildlife Management Area throughout Smyth and Washington counties, and eventually tie in to the Virginia Creeper Trail.

The **Overmountain Victory Trail** could connect the town of Abingdon to the states of Tennessee, North Carolina and South Carolina along the 330-mile route of the Patriot militia taken in 1780.

The **New River Trail Extension** will connect the New River Trail State Park in Pulaski with the Huckleberry Trail in Christiansburg.

The **Huckleberry Trail Extension** will connect the existing trail in Montgomery County to the trail system in the George Washington and Jefferson National Forests.

The **Roanoke River Greenway** will connect Montgomery, Roanoke, Bedford and Franklin counties to the cities of Salem and Roanoke, and Explore Park. This network will tie into Roanoke Valley Greenways, connecting to Carvins Cove Reservoir, the Blue Ridge Parkway, the Appalachian Trail and Botetourt County.

The **Jackson River Scenic Trail** could connect Alleghany and Bath counties to the City of Covington.

The **Alleghany Highlands Trail** could connect national forest trails in Alleghany and Bath Counties with trails in Douthat State Park.

The **Craig Valley Scenic Trail** could connect New Castle in Craig County to Eagle Rock in Botetourt County.

The **Valley Rail-Trinkle Trail** could connect Hollins University in Roanoke County to Lexington.

**Blue Ridge Parkway Trails** could provide routes for self-powered travelers along the parkway's length and connect to existing trails within adjacent networks like the Roanoke Valley Greenways.

The **Brushy Blue Greenway** plan connects Lexington in Rockbridge County to Buena Vista, and it could eventually connect with the George Washington-Jefferson Forest and the Blue Ridge Parkway.

The **North River Trail**, along the abandoned Chesapeake Western railway corridor, could connect the North River and Mossy Creek, from North River Gorge to Bridgewater in Augusta and Rockingham counties, and link the Shenandoah National Park to the George Washington-Jefferson National Forest.

A **Staunton to Harrisonburg Rail with Trail** along the former Norfolk Southern railroad corridor could connect Augusta and Rockingham counties to these cities.

The **Clifton Forge to Staunton to Waynesboro Trail** could connect these jurisdictions along an active CSX Railroad line if a rails-with-trails approach were considered.

The **Edinburgh to Mt. Jackson Trail** could link these two towns along the abandoned Norfolk Southern Railway.

The **Bull Run-Occoquan Trail Extension** could connect the existing 18-mile trail to the PHNST and Bull Run Mountain.

# Trails and Greenways

## Proposed Regional Trails (cont.)

The **Mount Vernon Trail Extension** would complete the existing trail from Roosevelt Island to Interstate 495.

The **Bull Run Mountain/Mill-to-Mill Trail** would connect Aldie Mill Historic Park in Loudoun County through the Bull Run Mountains to Beverley Mill in Prince William County.

The **W&OD Trail Extension** will connect the 45-mile existing trail to White's Ferry to the north, the Appalachian Trail to the west, and the Potomac Heritage National Scenic Trail to the east.

The **Accotink Stream Valley/Fairfax Cross County Trail** will connect Great Falls Regional Park to the Accotink Bay, linking to the W&OD Trail and the Potomac Heritage National Scenic Trail.

The **Rappahannock River Heritage Trail** could connect the City of Fredericksburg to Stafford and Fauquier counties, and tie in to the proposed Virginia Central Rail Trail linking Spotsylvania, Culpeper and Orange counties.

The **Virginia Blue Ridge Railway Trail** along the Piney and Tye Rivers could link Nelson and Amherst counties to the Appalachian Trail.

A **Rivanna River Greenway** system through Fluvanna and Albemarle counties could connect the Town of Columbia to the City of Charlottesville.

The proposed historic **Three-Notched Trail** could connect Richmond and the East Coast Greenway to Charlottesville and the Crozet Tunnel, eventually connecting to the South River Greenway in Waynesboro.

There is potential for a **Central Virginia Greenway** linking Peaks of Otter to the Appomattox Heritage Trail, connecting Bedford and Appomattox counties, and the cities of Bedford and Lynchburg. This trail could also connect to the James River Heritage Trail.

The following trails are potential segments along **The Tobacco Heritage Trail** and/or the statewide Trans-Virginia Southern Trail: The existing **Danville Riverwalk** and the **Richmond & Danville (R&D) Rail-Trail** in Pittsylvania could be extended to connect to South Boston; the **Dan River Trail** could connect South Boston to Staunton River State Park following the R&D rail line and Corps of Engineers flowage easements. The **Staunton River Trail** could connect Staunton River State Park and Staunton River Battlefield State Park. The **Virginian Trail** could link Meherrin and possibly the **High Bridge Trail State Park** to the **Virginia Beach Pipeline**. The southern part of the loop would be formed by the abandoned Norfolk, Franklin and Danville (**NF&D**), a.k.a. the Atlantic & Danville (**A&D**), Railroad from Danville through Occoneechee State Park to Lawrenceville. The statewide East Coast Greenway could utilize the portion of the NF&D Trail from Lawrenceville to US Bike Route 1 at VA Route 4 at John H. Kerr Reservoir.

With connectors at each end, the **Dick and Willy** (Danville and Winston) **Rail Trail/Smith River Trail**, which includes the existing Fieldale Walking Trail in Henry County and Martinsville's Uptown Rail Trail, could link the Danville trail system to the east and Philpott Reservoir to the west, with a spur to Stuart along the **Mayo River Rail Trail**.

The **High Bridge Trail** connects Pamplin City to Burkeville in Prince Edward, Cumberland and Nottoway counties, and will eventually connect to nearby public lands, greenways in Farmville, and the Appomattox Recreation and Heritage Trail in Appomattox County. There is also potential to connect this long-distance trail to the Tobacco Heritage Trail network.

The **Cumberland-Appomattox Trail** could connect Cumberland and Buckingham counties to the existing Willis River Trail and the proposed Lynchburg to Appomattox Trail.

The **Virginia Central Rail Trail** could link Fredericksburg to Spotsylvania and Orange counties.

The **George Washington Birthplace to Mount Vernon Trail** could connect our first president's national monument in Westmoreland County to his mansion in Alexandria and serve as a major segment of the Potomac Heritage National Scenic Trail.

The **Lower Appomattox River Trail** could connect Chesterfield, Dinwiddie and Prince George counties to the cities of Colonial Heights, Petersburg and Hopewell.

The trail system **Trekking Dinwiddie** could be connected to Petersburg through trails along the lower Appomattox River and to the East Coast Greenway.

The **Cabin Creek Trail** could link several parks in Hopewell to the Lower Appomattox River Trail.

The **Kiptopeke to Cape Charles Trail** will connect Kiptopeke State Park with the Cape Charles Coastal Habitat Natural Area Preserve.

The **Multi-City Bike Trail** could link the Alternate East Coast Greenway to the **Suffolk Seaboard Coastline** and **Western Branch** trails to the west and to trails in Norfolk and Virginia Beach to the east. Portions of this route could also be used as part of the Trans-Virginia Southern Trail to connect the Virginia Beach Pipeline to the Chesapeake Bay. The existing pedestrian access along the Route 264 Berkley Bridge, the Elizabeth River Passenger Ferry, or proposed improvements to the Midtown Tunnel could form the connection between Norfolk and Portsmouth as a link along the alternate East Coast Greenway.

The **Dismal Swamp Canal Trail and Greenway** will connect the historic Deep Creek community in Chesapeake to North Carolina to form part of the Alternate East Coast Greenway.

### Study outlines top 10 features of active communities

A November 2006 study highlights the top 10 design and policy features that help make communities healthier and more active. These include:

- Land use and community design that promotes a mix of commercial and residential development and offers walking and bicycle trails to help increase activity.
- Offering transportation choices through mass transit and pedestrian infrastructure.
- Aesthetic features such as historic attractions and monuments that draw pedestrians.
- Institutional and organizational policies that support physical activity, such as physical education programs at schools and showers and gyms in the workplace.
- Promotional campaigns with messages about the importance of activity.
- Providing funding for bike lanes, and parks and recreation facilities.

The study also found that travel patterns figure prominently in how active a community is, because people are more likely to choose alternative and more active modes of travel, such as transit or walking, if they see other people choosing these modes.

*(University of St. Louis study, Brennan et al., 2006.)*

### Local trail planning

DCR survey results showed that both regional planners and local governments agree that a lack of funding is a major problem for trail planners. Only a handful of local governments have a formally adopted trails plan. There are several ways having a locally adopted plan helps localities' chances of bringing bicycle and pedestrian facilities into existence. For example, for road construction projects, VDOT policy allows for using up to 20 percent of total project costs for the cost of bicycle facilities in cases where the improvements lie along a planned designated bicycle or pedestrian route. When proposed improvements do not lie along a designated route, the ceiling is 10 percent of project cost. Having a plan also helps localities compete for Transportation Enhancement and Recreational Trail grants. In addition, these plans can

identify priorities for how annual paved shoulder maintenance funds will be used. Bicycle and pedestrian projects do not have to accompany road projects; they can also be submitted as independent projects to compete against all other projects in a region's six-year transportation planning.

The level of detail and related implementation of existing plans across the state reflects the political climate of the jurisdictions. With only a small percentage of existing plans approved and integrated into the locality's comprehensive plan, there is a risk that future development will not explicitly include bicyclists and pedestrians. Green infrastructure planning at the local level could increase the number of trails and greenways that are integrated into development plans.

### Statewide trail planning

Statewide synthesis of existing local plans, many of which have not been formerly adopted, is a challenge for the development of a statewide trails and greenways plan. Both regional and local plans take many forms; along with mobility plans there are bicycle-pedestrian plans, greenway plans, water trail plans, bikeway plans, and open-space plans that incorporate trails. Although most planning districts have a bicycle and pedestrian plan for sidewalks and bicycles lanes or paths within VDOT's right-of-way, implementation has been inconsistent across the state.

### Thomas Jefferson Planning District Commission case study

Within any given region, the priority placed upon trail planning is related to the depth of understanding for how trails benefit communities. The Thomas Jefferson Planning District includes the needs of walkers and cyclists in all of their transportation plans, including safety studies, circulation plans, grants, long-range plans, transit plans, levels-of-quality guidelines, and disability-need studies and designs. They also provide local walkability workshops, regional greenways-and-trails forums, and have included \$6 million for walk and bike projects in the Metropolitan Planning Organization's (MPO) long-range plan. The region's concentration of people interested in sustainability has led to the development of the United Jefferson Area Mobility Plan, with the overarching goal to create a balanced, multi-modal transportation network by improving connections throughout the region; improving mobility within neighborhoods, towns, and counties; and making transportation choices which help foster livable communities.

### Bicycle and pedestrian accommodations

With increasing interest in bicycling and walking, many localities are beginning or expanding efforts to include bicycle and pedestrian accommodations in their planning efforts. The Virginia Department of Transportation encourages bicycle and pedestrian planning as an element of transportation planning, and publishes a resource guide to assist local and regional planning agencies develop and implement bicycle plans. In 2004, the Commonwealth Transportation Board, which develops policy for VDOT, adopted the *Policy for Integrating Bicycle and Pedestrian Accommodations*, which establishes bicycling and walking as “fundamental transportation modes.” The policy can be found online at [www.virginiadot.org/bikepedpolicy](http://www.virginiadot.org/bikepedpolicy).

The policy establishes the principle that all highway construction projects must be approached with the presumption that they will accommodate cyclists and pedestrians. Specifics are determined in the process of planning and designing individual projects. VDOT is currently involved in an extensive implementation effort to work this new approach into the agency’s daily operations.

As with any planning process, the most important aspect of bicycle and pedestrian planning involves obtaining input from the public. Achieving a balance between conflicting demands on the transportation system is also essential. VDOT encourages localities to think in terms of enhancing connectivity, and improving corridors and networks. Many areas in Virginia have organized bicycling clubs that represent the interests of citizen cyclists and help gather and provide information. However, not all community bicycling needs are represented by clubs. Chambers of commerce and local tourism interests often advocate for bicycle and pedestrian accommodations to link points of interest, attractions, accommodations and restaurants. Furthermore, local governments attempting to reduce the number of vehicle trips made each day are interested in bicycle routes and walkways that encourage active living and link residential areas with schools, libraries, commercial centers, parks and employment centers.

Bicycle and pedestrian plans should be integrated into the transportation elements of local comprehensive plans, and plans developed at the regional MPO, planning district commission (PDC) and state levels. Multimodal planning recognizes the importance of integrating non-motorized transportation planning with transit plans and parks and recreation plans (see

chapter IX-B-6, Transportation Programs). To ensure that the improvements in a multimodal plan are carried out, implementation strategies must be developed, and the plan needs to be adopted by the locality or regional body. Facility design guidelines are provided in the *VDOT Road Design Manual*, the *AASHTO Guide for the Development of Bicycle Facilities*, and the *AASHTO Guide for the Planning, Design and Operation of Pedestrian Facilities*



### Railroads and trails

Some of Virginia’s most popular and heavily used trails were once active railroads. As the automobile and the interstate highway system decreased use of railroads, unprofitable lines have been abandoned. Once the rails and ties are removed, the gravel surface remaining provides an excellent base on which to build multi-use trails. The Virginia Creeper Trail, New River Trail State Park, and the Washington and Old Dominion Trail are all former railroads.

The recreational potential of railroad rights-of-way has long been recognized. Congress enacted the National Trails System Act in 1968 to establish a nationwide network of trails. The act provided direction to encourage use of abandoned rail corridors as trails. After 15 years, the number of rail trails developed on abandoned railroads remained small, as most railroads don’t own all the land where their tracks lie. Instead, the railroads often have legal rights, or easements, to use the land of adjoining property owners. When the railroad abandons the rail line, these easements often are revoked, and the property reverts to the adjoining landowners. Establishing a trail under these circumstances requires an agreement with the railroad and all adjacent landowners.

Congress addressed this problem in the *National Trails System Act Amendments* of 1983. Those amendments preclude a railroad’s easement from

VDOT’s first official bicycling map is available online: [www.virginiadot.org/bikemap](http://www.virginiadot.org/bikemap).

lapsing if the right-of-way is used as a recreational trail. As a result, trail-use proponents now only must have a formal agreement with the railroad. Before abandonment is granted to a railroad, posted notices tell the public and all potentially affected persons of the request so that comments and appeals can be solicited. Trail users should respond to the notice and tell the railroad of their interest in the right-of-way as a trail.

Crisscrossing Virginia is an extensive system of more than 3,000 miles of operating railroads. Over the past 30 years, a substantial amount of this railroad mileage has been abandoned. While a few have been acquired for trail use and become very popular recreation resources, the majority of these corridors weren't acquired for recreational use because property ownership reverted to adjacent landowners, or because there was no local support for converting them to trails.

Outside of abandonment, railroad companies usually discourage public use of railroad property because of concerns for the safety of their employees and the risk of liability created by inviting the public on to railroad property. In general, rail companies are reluctant to discuss trail crossings or rails-with-trails proposals. It may take General Assembly action to create an environment in Virginia where railroads will feel safe agreeing to rail-with-trail projects. Rails-with-trails are successful in other states, and these examples are illustrated in *Rails-with-Trails: Lessons Learned* published in 2002 by the Federal Highway Administration. A process for accommodating recreational use along active rail corridors needs to be established in Virginia.

The high-speed rail corridor, a proposed single-track corridor that will allow for high-speed freight and passenger service connecting Washington, DC to Raleigh, NC, is an opportunity for rail with trail through some sections of Virginia. A partnership with the Department of Rail and Public Transportation and railroads for trail development will maximize the public value of these corridors. This coordinated effort could provide a route for the East Coast Greenway through the urban crescent.

### Utility corridors

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Other utility corridors that may have potential for trail development include water lines, water storage project aqueducts, irrigation canals, historic transportation canals, flood control projects, electric power lines, sewer lines, fiber optics lines, gas and oil transmission pipelines, emergency access and road right-of-ways.

In Alexandria, some neighborhoods have been connected through unutilized street right-of-ways. The Rails to Trails Conservancy reports that 40 percent of current rail trails double as utility corridors under a variety of arrangements. The maintenance of the Washington and Old Dominion Trail in Northern Virginia is bankrolled by lease payments from utilities. The two and a half-mile Cushman Powerline Trail in Gig Harbor, Washington, and a proposed four-mile greenway in Naples, Florida, that will utilize an easement owned by Florida Power and Light, are other examples.

There is potential for utility corridors and trails to coexist and provide mutual benefits through shared maintenance costs. Trail users and volunteer patrols could provide additional monitoring of these shared corridors. Other benefits include making utility corridors more attractive, using a potentially divisive barrier as a connector, the opportunity for public-private partnerships promoting recreation and public health, better use of valuable urban land, and economy of development.

### Trail users

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Greenways should not all look alike, nor should each facility serve the same user group. One person may seek the solitude of a remote hike in the wilderness, while another wants to join neighbors exercising on a cushioned surface close to home. Someone else may prefer a safe paved path for the quickest possible commute to work or school. Others may wish to preserve a corridor's pristine natural resources, and exclude any recreational use. A well-planned system will meet diverse and expanding needs as new technologies bring additional uses, and better communication expands the user demographic base.

### Mountain bicycling

The International Mountain Bicycling Association (IMBA) ([www.imba.com](http://www.imba.com)) has been a leader in setting standards for mountain bicycling around the world. IMBA sponsors trail construction field schools to help users and land managers learn to build trails that are safe to use and gentle on the environment. User ethics and responsibilities, as well as trail construction techniques, are disseminated through publications and training seminars. Many mountain bicycling clubs have formed throughout the state and are employing IMBA's teachings in working with their public land managers to develop trail systems. Mountain Bike Virginia ([www.mountainbikevirginia.com](http://www.mountainbikevirginia.com)) is the statewide organization.



An IMBA trail building workshop at Pocahontas State Park. Photo by Jennifer Wampler.

DCR has signed a memorandum of understanding with IMBA that pledges both organizations will:

- Work closely in accomplishing common goals and objectives.
- Look for opportunities to conduct IMBA Trailbuilding Schools.
- Encourage collaboration to create, maintain and manage mountain bicycling opportunities where appropriate.
- Acknowledge and promote mountain bicycling as a recreation option at public lands where appropriate.
- Promote and support mountain bike related tourism in Virginia.
- Promote mountain bicycling as a family activity with health benefits.

### Bicycling

BikeWalk Virginia ([www.BikeWalkvirginia.org](http://www.BikeWalkvirginia.org)) and the Virginia Bicycling Federation ([www.vabike.org](http://www.vabike.org)) work together to advocate for the interests of cyclists across the state. They support a number of local bike

clubs and chapters to provide information and advocacy, lead organized rides, and promote public safety.

The Virginia Department of Transportation's Bicycle and Pedestrian Program strives to make bicycling and walking safer and more convenient for all Virginians. The program coordinator is based in the Transportation and Mobility Planning Division in the Richmond central office, and there is a coordinator in each of the nine VDOT district offices.

### Equestrian trails

Trail riding is an increasingly popular recreational activity among Virginia horseback riders. The Virginia Horse Council ([www.virginiahorsecouncil.org](http://www.virginiahorsecouncil.org)) appointed a committee to establish direction and coordination of statewide equestrian trail development and maintenance activities. Participating clubs have formed working relationships with public and private land managers across the state to improve and maintain existing trails, as well as to establish new trail riding opportunities. The results of this successful initiative can be seen in national forests, many state parks, state forests and local parks.



*The Tobacco Heritage Trail turned a railroad right-of-way into a multi-user trail. Photo by Jennifer Wampler.*

### Hiking

The American Hiking Society advocates for the interests of hikers in Virginia as well as the rest of the nation. Although there is no statewide hiking organization, a number of active local and regional trail clubs maintain sections of the Appalachian Trail and other hiking trails across the Commonwealth. The Virginia Volkspport Association ([www.walkvirginia.com](http://www.walkvirginia.com)) promotes the spirit of walking and events designed to appeal to all ages.

### Motorized trails

The Virginia Off-Highway Vehicle Coalition ([www.vohvc.org](http://www.vohvc.org)) represents the interests of OHV users to establish and improve OHV opportunities in Virginia through education, responsible land use, environmental sustainability, and the promotion of safe, friendly, family-oriented recreation. The Virginia Four-Wheel Drive Association ([www.va4wda.org](http://www.va4wda.org)) is a family-oriented, nonprofit organization promoting safe, responsible and fun four wheeling. These groups are interested in developing more trails for legal off-road use, particularly in the Eastern part of Virginia.

The U.S. Forest Service reports that one of the fastest growing forms of outdoor recreation involves the use of OHVs. OHV owners and users have risen sevenfold in less than three decades—from about 5 million in 1972, to 36 million in 2002. While only a small number of OHV users leave lasting traces on the land, this small percentage has created undesired impacts. Decreasing availability of open space outside public land and increased population growth and urbanization, along with the adverse impacts of renegade OHV users, has led the Forest Service to attribute unmanaged recreation as one of four major threats to our nation's forests and grasslands. Management of OHV use in the national forests is guided by specific poli-

cies and procedures. In November of 2005, the Forest Service released its Final Rule covering OHV use that prohibits OHVs and other motor vehicles on undesignated routes. The Final Rule provides that Forest Supervisors and District Rangers shall make actual designation of routes after receiving public input.

In West Virginia, motorized trail systems have been created to permit OHV use. The Hatfield and McCoy Trail has become a destination for recreational tourism in a multi-state region. The trail contributes to the economics of the surrounding small towns. Much of the trail system is located on private and corporate timber lands and mining company lands. This land is made available to the public through an agreement with the State of West Virginia. Local and regional governments should look for opportunities to create a similar resource on private lands in Virginia.

### Delfosse Trail case study

The Delfosse Trail was a joint project of Nelson County Parks and Recreation and the Delfosse Winery. The goal was to develop a trail that hikers and mountain bikers could share with All-Terrain Vehicles. Built in just four months, this 5.5-mile trail is a great example of a public-private partnership, which will bring business to the winery and provide recreation for residents and tourists. To control the use of this resource, Nelson County will lead scheduled ATV rides, with the trail left open to hikers and mountain bikers during nonscheduled ATV hours when the winery is open. This trail was built with a grant from the Recreational Trails Program.



*The Delfosse Trail in Faber, Virginia. Photo by Jennifer Wampler.*

### User feedback

Users report that there is a need for more diversity within trails systems, particularly for the variety of skill levels within user groups. In many areas of the state where the public only has access to trails on federal land, the trails are generally primitive and appeal to advanced users. Some existing networks fail to provide many functional loops or less challenging trails for beginners or children. The International Mountain Bicycling Association (IMBA) reports that 95 percent of existing trails in the Shenandoah region cater to advanced users only. As a result of funding shortfalls at the federal level, trails in national parks and forests have deteriorated, and users must often have advanced skill levels to negotiate them, limiting the enjoyment of these publicly funded assets. Mountain bicyclers report that trail conditions have significantly deteriorated in the national parks and forests. Many enthusiastic volunteers are drawn from new users, so trails for beginners are important. Additional trails for beginners are desperately needed on public lands.

Other park facilities receive routine staff maintenance, but trail maintenance and monitoring often falls primarily on volunteer groups. The Potomac Appalachian Trail Club maintains approximately 630 miles of hiking, biking and equestrian trails in Virginia. The International Mountain Bicycling Association, through its Virginia chapters, has logged an average of 6,500 volunteer hours per year over the past two years. Roanoke Valley Greenways is currently tracking volunteer hours in a database ([www.vast-network.org](http://www.vast-network.org)) that reports over 6,000 volunteer hours. Similar efforts are being made statewide by a committed handful of volunteers for the benefit of all people who enjoy trails.

Many trail user groups report a lack of younger, newer members. This could be the result of an aging population and also indicative of a less active younger generation. As these new members replace retiring volunteers, there is a growing concern that existing ranks may be depleted in future years.

### Trail design and the leisure experience

When designing trails, it is important to remember that people use trails because they want to enjoy or challenge themselves, or to escape from hectic lives and become immersed in nature. Spiritual journeys are often made on trails, as people either seek reconnection with nature or the self-confidence that follows from reaching a personal goal. Although it is important to minimize risk, it is also important to design for the desired leisure experience. For trail users seeking soli-

tude, skill challenges, adventure or exercise, an over-built trail can spoil the experience.

At the 2006 Robert Wood Johnson Foundation Active Living Research conference, presenters discussed the features that draw users to trails, particularly in urban areas. Trails with shade, scenic views, and opportunities to see wildlife, large trees, large grassy areas or water features will be used more often. Trails are also more likely to be used if they are perceived as safe and well maintained, and if there are trailside services, particularly food service, available. The number, importance and proximity of destinations that can be reached by the trail also increases the amount of use. Design for amenities that draw users, especially parking, benches, bathrooms and water fountains.

Trail designers also need to know the types of use the trail should support, based upon input from the people who will be using and taking care of the trail. Guidelines or standards for trail development should support the experience(s) desired by these users. Some of these user groups have advocacy organizations that can be very helpful for reaching out to the volunteer network that supports the trail.

DCR has developed a guide for the organization, planning and development of local greenway and trails. The Greenways and Trails Toolbox can be downloaded from DCR's Web site at <http://www.dcr.virginia.gov/prr/docs/toolbox.pdf>

### Trail assessment, classification and marking

While levels of risk can vary, the risk should be communicated to the user. Trail assessment, classification and signage should be included in each project to communicate risk and other important information. Trail users grow accustomed to how trail signs convey information if there is uniformity in the way trails are assessed and marked. Virginia should adopt and disseminate a uniform trail assessment system to increase user safety and enjoyment, while identifying and prioritizing maintenance, access and construction needs for the trail manager.

Trail managers should provide information about their trails that allows users to choose the trails within their skill and capability level. It is important for all users, but especially elderly or disabled users, to understand a specific trail's maximum grade and cross-slope, trail width, surface, obstacles and length before using the trail. The Universal Trail Assessment Process (UTAP) is a tool that land managers, agencies and individuals use to monitor, improve and document trails, which enable informed trail choices. This information should



be made available at trails heads, in brochures and on websites.

A comprehensive signage plan is needed to inform trail users about the safe and appropriate use of all facilities and to convey a sense of the place. The appeal and utility of a route is related to the quality, coherence, consistency and frequency of the signs along it. Good signage not only enhances the visitor's experience along the trail, it promotes the trail and conveys the community's economic vitality and civic pride.

Where trails cross jurisdictional boundaries, signs should remain consistent in design, color scheme and logo. Visitors should feel confident that they would not get lost along the route without a map. Clear signing toward and away from a trail system is as important as signs along each route. This alerts automobile traffic to watch out for self-powered traffic and advertises that an alternative to using the car is available.

European countries have developed good models for signing multi-jurisdictional trails. Directional signing for U.K.'s National Cycle Network uses one color for national routes, and another for regional routes. All signs have the user symbol (bicycle) and route number. At frequent locations along the route, signs include key destinations, directions and distances.

### Key elements of successful trail system projects

#### General

- Each project includes a grassroots support effort with enthusiastic people and agencies.
- The projects have a clear plan that illustrates what the individual or group would like to do and how they intend to achieve their desired goals.
- Partnerships exist and each partner has a defined role that is carried out.
- There is access to funding and an understanding of how long-term maintenance and management will occur.

#### Major criteria for a quality project

- The trail system is sensitive to both natural and cultural resources.
- The trail system generates revenue, either through compatible leased use of the corridor, or through concessions or other trail-related businesses.

- The trail system is a reflection of social responsibility and enhances the community, region, state and country.

#### Criteria for successful trail system development

- The system must be well planned, including phasing, long-term maintenance and funding.
- The system clearly connects Point A to Point B and usually connects numerous points in-between.
- The trail system has a clear identity with a definitive name that attracts people and defines the trail's focus.
- The trail system is well signed, often with a special identity signage program.
- A well-designed and attractive map is readily available at numerous locations.
- Interpretation is provided. Examples range from simple explanation on maps or at trailheads, to more formal wayside exhibits or even visitor centers.
- Support service systems are available. This can range from highly sophisticated to primitive (for example, trailheads, restrooms, campgrounds, lodging, restaurants, supply shops). Many of the most successful trails link to towns where diverse services are provided.

(Adapted from *Innovative Non-motorized Trail Projects and Ideas*.)

#### Criteria for long-term viability

- There is a management strategy that describes how the trail will be managed, used and maintained.
- The management plan identifies how specific tasks will be carried out and who will be responsible for them, including schedules and assignments for maintenance activities and staffing requirements.
- The plan identifies management issues and user guidelines to address those issues.
- A monitoring program is established with an enforcement mechanism in place.
- A core of volunteers is maintained through regular meetings, programmed events and continued publicity.

(Adapted from *Creating Greenways: A Citizen's Guide*.)

### Roles and responsibilities

#### Federally managed trails

Most of Virginia's existing long-distance hiking, horse-back-riding, and public off-road motorized trails are on federal lands. The George Washington and Jefferson National Forests contain 2,385 miles of system trails, including 375 miles of the Appalachian Trail. Most of the trails are non-motorized and multi-use, allowing hikers, equestrians and mountain bikers. The forests also have 78 miles of motorized trails open to unlicensed motorized vehicles (ATVs and trail bikes). Shenandoah National Park contains 516 miles of trails, including 101 miles of the Appalachian Trail and approximately 200 miles of horse trails. Together, these two resources provide 2,901 miles of backcountry trails.

In Eastern Virginia, Assateague Island National Seashore, the Great Dismal Swamp National Wildlife Refuge, Back Bay National Wildlife Refuge, Prince William Forest Park and the larger national battlefield parks all offer opportunities for trail users. The Colonial Parkway and the George Washington Memorial Parkway are popular bicycle trails.

The Appalachian Trail is unique because of its history of cooperative management. One-quarter of the entire trail, 550 miles, runs through Virginia. For more than 75 years, the many representatives of the Appalachian Trail Conservancy (ATC) have worked voluntarily with federal, state and local governments, as well as numerous individual landowners, to solve problems associated with the acquisition, development, administration, management and maintenance of the trail. The Appalachian Trail Conservancy and its member clubs manage the trail. Recognizing its importance, the Virginia General Assembly in the *Code of Virginia*, Chapter 10.1-203, as amended, designated DCR as responsible for acquisition, administration and management of the trail in Virginia. DCR has a signed agreement with ATC wherein DCR agrees to: review the trail's location on state-owned lands; ensure widespread understanding of the significance of the trail and the components of good stewardship; acquire lands or interests in lands to conserve trail values; delegate responsibility for developing, maintaining and monitoring state-owned trail corridor lands to ATC and trail-maintaining clubs; be a liaison between ATC and other state agencies; and meet annually with representatives of ATC to discuss management and concerns.

#### State managed trails

Virginia's state parks offer more than 460 miles of trails, many of which connect to the extensive trail and gated roads system in adjacent state and national forests. New River Trail State Park is a 57-mile rail-trail stretching from Pulaski to Galax in Southwest Virginia. The park is a multi-use, non-motorized trail for use by hikers, bicyclists and equestrians. It is connected to the trails in the Mount Rogers National Recreation Area and to the Virginia Creeper Trail that leads to Abingdon. This trail system is almost 175 miles long and intersects many side trails. The Wilderness Road Trail in Lee County joins the Wilderness Road State Park with the Cumberland Gap National Historic Park and uses portions of an abandoned railroad. In addition to hiking trails, many parks have trails for horse-back riding as well as trails designed specifically for mountain biking.

Virginia's Department of Transportation has a number of shared-use paths that run parallel to major roads. Since these are entirely within VDOT right-of-way, they are built and maintained by VDOT. Many of these paths, like the one beside the Fairfax County Parkway, are located in Northern Virginia, where bicycle plans have been in place for many years.

Virginia's Department of Game and Inland Fisheries, within its wildlife management area system, maintains numerous access trails for hunting, fishing and other wildlife-related outdoor recreation. These trails are also open for hiking and horseback riding, although it is not recommended during hunting season, except on Sundays. The popular Virginia Birding and Wildlife Trail, a thematic driving trail that links approved sites across the state, celebrates the diversity of Virginia's natural habitat.

The Virginia Department of Forestry also maintains many trails in 17 state forests. The Zoar State Forest trails, the Willis River hiking and canoe trails in the Cumberland State Forest, and the connector between the Cumberland and Appomattox-Buckingham State Forests are some of the more popular trails in use. Most state forests contain hiking trails (54 total miles) and an infrastructure of forest roads and trails, amounting to approximately 260 miles that are available for use by trail enthusiasts. Horseback riders have recognized the potential that this system of gated roads offers, and have worked with the state forester to build and maintain a system of horse trails in the Cumberland State, Appomattox-Buckingham, and Prince Edward state forests. Mountain bicyclists also use many of the same forest management roads as trails.

Other state-owned lands, such as colleges and universities, include trail systems. Students and the surrounding community heavily use many of these trails. University-owned lands that are not appurtenant to the main campus may have trail development potential and should be evaluated.

### Locally and regionally managed trails

Local and regional parks have established lengthy multi-use trails, some of which take advantage of unique corridors in densely populated areas. The W&OD Railroad Regional Park, a National Recreation Trail, follows the bed of the abandoned Washington and Old Dominion Railroad. Administered by the Northern Virginia Regional Park Authority, it extends 45 miles from Alexandria to Purcellville in Loudoun County. The Virginia Creeper Trail, another National Recreation Trail, is a multi-purpose trail constructed on an abandoned railroad right-of-way between the towns of Abingdon and Damascus, and continues through the National Forest to Whitetop Station. In the Roanoke Valley, trails have been developed along streams, utility corridors, abandoned railroads, and through every park and greenway in the region in their combined effort to connect their communities. In Fairfax and Arlington counties, many trails have been developed along stream valleys in designated environmental-quality corridors and stream-valley parks. Short foot trails, such as interpretive and walking trails five miles or shorter in length, are found in nearly all recreational areas and in many local parks throughout the Commonwealth.

### Trails on private land

Privately owned corporate properties also may help meet trail needs. In some cases, trail recreation may suitably interface with management activities on lands owned by forest product companies, utility companies, mining companies or agricultural lands. Cooperative management programs for limited recreational use have been developed with Westvaco Corporation on some of its lands. For example, Westvaco Corporation maintains a 2.8-mile nature trail along Buffalo Creek in Bedford County that is used for recreational and environmental education purposes. Hundreds of miles of corporate forest roads, which provide access to timber, offer a wide variety of potential trail opportunities. User groups should work with the companies to help develop and maintain these trails.

Private individuals often voluntarily offer trails through their property. They may give an easement on a portion of their land, or may allow access through an agreement with a governmental agency. In these instances, the landowner's liability is greatly limited (§29.1-509 of the Code of Virginia). Many local businesses have developed trails along their property, connecting to existing trails and providing key linkages for public trail systems. With more businesses realizing the value of trails for employees' physical and mental health, corporate trails are more numerous and should be included in local comprehensive trail plans. In addition, many developers realize that the incorporation of a trails system into their plans can help increase housing and office space values and boost sales. Private trails enhance the community and should connect into public systems.

### Proffers

Trail and greenway facilities can also be proffered in on private developments. In order to increase funding leverage for proffers, locally adopted plans should identify areas for a trail network. Special attention should be given to areas where the locality anticipates development and where rezoning cases are likely. The presence of a bicycle or pedestrian route, located in a locally adopted plan that runs alongside a road or corridor adjacent or through a proposed development, provides the developer with additional motivation to proffer in that facility.

Citizens can also play a role in encouraging a developer to proffer in trails and greenways. Citizen groups should contact the developer as soon as the proposed development is announced and ask for specific bicycle and pedestrian accommodations. A developer who had not originally planned to provide these facilities may be willing to include them after a large show of community support. Citizens should be aware that proffers are legal documents, and the type of trail or greenway should be described in detail and reviewed by a lawyer. For example, language that just refers to "bike path" is too vague; the language should describe the length of the trail, location of the trail, the surface, the width and any other amenities desired, such as lighting or shoulders. (Adapted from VDOT's Bicycle Facility Resource Guide.)

### Tips for working with developers

The Fifth Amendment's takings clause and associated legal precedent prohibits conditioning subdivision and site plan approvals upon a developer's willingness to allow or provide a public trail. When a landowner is requesting a zoning change, or if the zoning ordinance provides density or other bonuses to the developer in return for trail access, there may be an opportunity to negotiate for the desired improvements, especially if they are mentioned in the jurisdiction's comprehensive plan. It is important to have someone at the table early in the process who understands the leverage and mutual interests of each party to negotiate for a connected trail system.

### Tips for local government

- Have reasonable language in an approved plan that is supported by the local planning commission and board of supervisors or city council.
- Have a good map that is easy to access showing the overall plan.
- Develop design specifications as part of a "Standards for Developers" manual. This manual should include trail classifications that relate back to the adopted plan.
- Develop trail language to include on the developer's checklist at project conception.
- Request the improvement early in the process. Negotiate for the desired improvement in the zoning process, preferably during the pre-application stage.
- Review zoning applications to ensure appropriate final language.
- Review site plans as early as possible to ensure that the project is designed correctly. In addition to plan compliance, ensure minimal disturbance to natural resources, low long-term maintenance cost, ease of maintenance access, appropriate surface for surrounding and predicted uses, access for people with disabilities and reasonable cost to developer.
- Inspect trail facilities prior to construction, under construction if needed, and at completion for compliance with approved plans and accepted standards.
- Allocate staff time to provide the review outlined above. Ensure that this staff person is qualified and can handle high-pressure situations.
- Develop a standard operating procedure (SOP) to outline the review process.

*"Both the county's Design Standards Manual and the greenways section of the Open Space and Natural Resource Plan have useful information for developers. We also require a pre-application conference for any new development plan, where natural resource protection areas and bicycle-pedestrian connections are discussed."*

*—Dan Ashby Mahon, Supervisor, Greenway, Blueway Division, County of Albemarle Department of Parks and Recreation*

### Tips for advocates

- Ask your locality to create a position within parks and recreation, public works, planning or a related department to implement the recommendations for trails in the approved plan.
- Ask your locality to appoint a committee to act in an advisory capacity in the development of transportation plans. This committee should evaluate plan progress and recommend amendments and updated project descriptions. The citizens' committee can also present plan updates and recommendations for plan amendments to the metropolitan planning organization (MPO) for endorsement and approval by the MPO policy board. Made of members of the public, this committee should be appointed by localities and the MPO policy board. The committee should meet regularly to review and develop plans and assist in organizing and managing public meetings and comments.
- Ask your local board of supervisors to establish a pedestrian task force, consisting of citizens, appointed commission members and multi-disciplined staff, to review existing county pedestrian programs and activities, make recommendations on improving these programs, develop coordinated education and outreach efforts, and prioritize funding for pedestrian projects.
- Publicize and reward the work of developers, businesses and community leaders who support trail and greenway development.
- Bring something to the table such as money, equipment for trail development, or labor for trail maintenance or monitoring to demonstrate local support for the project.

***For sample language in approved plans in Virginia, refer to page 104.***

### Implementation strategies

Although every greenway project is different, these strategies can help move a project from a great idea to a community investment.

#### **Target a demonstration project**

Focus on building one section of your greenway that will highlight the positive impacts on the surrounding community. Choose a manageable and popular project.

#### **Secure the land**

Develop a matrix or table that includes the parcels under consideration, current use and ownership, existing level of protection (if any), the degree of control needed over each parcel, potential future uses, development threats, available funding, and the needs and wishes of the landowners. Although outright or fee simple purchase of the property will provide the most control over the property, other agreements like easements, conservation restrictions, and negotiations for public access may be all that is needed.

#### **Seek partnerships and work with landowners**

Land trusts and other nonprofit organizations can help develop and implement an effective protection strategy and work directly with the landowner to discuss the available options and associated tax benefits. Begin the dialogue with landowners early in the process. Start with the easiest and most accessible properties as the cornerstones of the greenway project. Respect landowners concerns and make modifications as needed.

#### **Develop an implementation strategy and map**

Determine which land protection techniques to use for each section of the greenway, and develop a timeline for milestones at both the parcel and the corridor level. Estimate the funding needed for each phase of the project and begin fund raising. A project map should show the corridor in relation to areas already protected, key resources and linkages, and critical parcels. Continue to design, develop and publicize the greenway, and get it on local and regional land-use maps.

Adapted from *Creating Greenways: A Citizen's Guide*. Available online at <http://www.mass.gov/dcr/stewardship/greenway/creatinggreenways.htm>

### The role for local governments

Since most projects evolve at the local level, all jurisdictions should have a trails component in their comprehensive plan that includes a variety of trail types to meet different user needs. Planners should retrofit local transportation plans to include bicycle and pedestrian accommodations. In Fairfax County, a greenways plan has led developers to connect planned developments to existing and proposed elements of the trail plan. Over the years, this has resulted in an extensive system and preservation of stream valleys. Incorporating trails and greenways into residential, commercial and industrial construction is an efficient way to build trail infrastructure, and it complements the public investment. Maintenance costs can also be shared with homeowners associations, businesses and other stakeholders if plans, standards and policies are in place.

### Creative local funding

A variety of approaches has been used successfully in Virginia to fund trail development projects. Local governments may want to follow Augusta County's approach and implement a capital improvement incentive program that provides a match for private dollars committed to trail development. Augusta County has leveraged \$2 million in public funds with over \$4 million from the community since their match program was initiated in the late 1980s. In Chesterfield County, use of the sheriff's prisoner work force to build trails and bridges provides a community amenity while inmates receive training in carpentry and trail construction.



*The Government Center Trail in Chesterfield was constructed with labor from the sheriff's work force. Photo by Jennifer Wampler.*

## Trails and Greenways

To provide for capital planning and management of trails within a city or county, planners should identify current gaps in information. To create plans that address more than just short-term, day-to-day operations, trail managers must have data on existing trail inventory, the condition of trails, what they are used for, what investments need to be made, how these investments should be prioritized and how a rational funding process can be implemented. Answering these questions is critical to the success of a comprehensive capital planning program that addresses the full spectrum of trail issues from budgeting and financing, to construction, maintenance and management.

To maximize trail promotion efforts, local governments should initiate efforts to have local trails designated as part of larger systems where appropriate. This may bring additional resources for maintenance as well through an expanded user base. The Occoquan Trail in Bull Run, an 18-mile hiking and equestrian trail, has recently been designated as a National Recreation Trail. This trail will be publicized on the American Trails website, [www.americantrails.org](http://www.americantrails.org), and receive markers to post along the trail.

### The role of state government in trail planning

State agencies play many different contributing roles related to greenways and trail planning. Each agency representative should have an understanding of the various roles other agencies play when providing technical assistance for trail projects. As greenways continue to evolve, coordination of the related agencies and organizations becomes more complex. Backed by thoughtful planning, projects can draw on the strengths of these agencies as opportunities for partnerships emerge.

#### ***DCR's greenways and trails program***

DCR is tasked by the *Code of Virginia* to develop a statewide system of trails. DCR does this in coordination with the various state agencies and organizations that are stakeholders in trail planning and development. DCR also provides assistance to communities to identify, plan and develop greenways through technical assistance and educational outreach. A trails and greenways strategic plan will be developed to prioritize the recommendations from the *Virginia Outdoors Plan*. The strategic plan is essential to develop action steps and promote partnerships for the success of the state program. An advisory committee will be appointed to assist with the development of the strategic plan.

#### ***Comprehensive Virginia greenways and trails plan***

At this point, both DCR and VDOT lack a comprehensive plan for greenways and trails or bike and pedestrian facilities. Roles and responsibilities are not well defined, and there is a need for better communication with stakeholders. When the state trail inventory and database is updated, and additional local or regional plans are complete, the stage will be set for developing a comprehensive Virginia greenways and trails plan. Comprehensive planning is an attempt to establish guidelines for the future growth of the Commonwealth's greenway system. As the term "comprehensive" suggests, this is an all-inclusive approach to addressing the issue of how greenways will evolve in our communities. A comprehensive plan is the formal document produced through this process, and is designed to serve as a guide for decisions about greenway development. The plan is an instrument to be used by community leaders who establish policies and make decisions regarding the physical development of greenways. This plan should be a comprehensive, long-range, general guidance instrument that focuses on physical development, and relates physical design proposals to community goals and social and economic policies. A sustained and cooperative effort is important to realize the vision of a statewide network of trails and greenways connecting the Commonwealth.



*The Sugarland Run Trail in Herndon connects homes to nearby long-distance trails. Photo by Jennifer Wampler.*

Federally Designated Trails in Virginia		Tourism-Recognized Trails in Virginia	
<b>National Recreation Trails</b> DeHart Mountain Trail New River Trail State Park Virginia Creeper Trail Algonkian Regional Park Sanctuary Trail The Massanutten Mountain Trail Buffalo Creek Nature Area Rivanna Trail Bull Run-Occoquan Trail Apple Orchard Falls Hoop Hole Sprouts Run Jack-o'-Lantern Branch Heritage Trail Washington and Old Dominion Trail Wild Oak Trail Cornelius Creek Blackwater Creek Cascades Flat Top-Falling Water Cascade Little Stony Creek Mount Rogers Mountain Laurel Petersburg Battlefield Pine Mountain	Rock Castle Gorge Seashore State Park Spotsylvania Battlefield Potomac River Water Trail Fairfax Cross Country Trail Virginia Capital Trail	<b>Virginia Heritage Trails</b> Virginia Civil War Trails The Crooked Road-Virginia's Heritage Music Trail Captain John Smith Trail Jamestown Discovery Trail Civil Rights in Education Heritage Trail Overmountain Victory National Historic Trail	<b>Bicycling in Virginia</b> Virginia Capital Trail Virginia Creeper Trail Tobacco Heritage Trail US Bicycle Route 76 and Blue Ridge Parkway Heart of Appalachia Route New River Trail Northern Virginia Trail Network
	<b>National Historic and Scenic Trails</b> Appalachian National Scenic Trail Potomac Heritage National Scenic Trail Overmountain Victory National Historic Trail Captain John Smith Chesapeake National Historic Trail	<b>Virginia Nature Trails</b> Virginia's Birding and Wildlife Trail Virginia's Appalachian Trail Virginia Creeper National Recreation Trail	<b>Trails on the Horizon</b> Wilderness Road Trail 'Round the Mountain Artisans Trail On Hallowed Ground Trail
	<b>National Millennium Trail</b> East Coast Greenway Appalachian National Scenic Trail Civil War Discovery Trail The Underground Railroad	<b>Virginia Winery Trails</b> Blue Ridge WineWay Monticello Wine Trail Loudoun's Wine Trail Northern Neck Wine Trail Bedford Wine Trail Shenandoah Valley Wine Country Trail Heart of Virginia Wine Trail	
<b>Community Millennium Trail</b>			
James River Heritage Trail (Blackwater Creek) African American Trails-Charlottesville Alexandria Heritage Trail Bay View Trail-Lorton Bicentennial Trail-Blacksburg Bridle Trails-Sky Meadows State Park-Paris Civil War Discovery Trail-Arlington Fairfax Cross County Trail Fluvanna Heritage Trail-Palmyra Hanging Rock Battlefield Trail-Roanoke Heart of Appalachia Bike Route and Scenic Drive-Big Stone Gap Huckleberry Trail-Blacksburg		New River Trail State Park-Foster Falls Radford Pathways Network Riverway Reston Pathway System Shady Ridge Trail-Dublin Battlefield Trail-Randolph Williamsburg Historic Necklace Thomas Jefferson Parkway-Charlottesville Turtle Island Trail-Huddleston Twin Pinnacle Trail-Mouth of Wilson Virginia Civil War Trails-Richmond Washington and Old Dominion Railroad Regional Park-Arlington White Oak Trail-Newport News Wytheville Historic District	

### Technical assistance and funding

The Department of Conservation and Recreation provides technical assistance to agencies and organizations interested in developing any of the different types of trails identified in this section. The Virginia Greenways and Trails Toolbox has been developed by DCR to assist trail proponents, planners and developers.

The National Park Service Rivers and Trails Conservation Assistance Program provides publications and technical assistance for greenways, blueway and trails projects.

The U.S. Department of Transportation Federal Highway Administration (FHWA) makes funds available to states to develop and maintain recreational trails and trail-related facilities for both nonmotorized and motorized recreational trail uses through the Recreational Trails Program (RTP). The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users program, known as SAFETEA-LU, will provide funding for public trails and enhancements for the 5-year period from 2005-2009

The Virginia Department of Transportation (VDOT) provides technical assistance in the development of pedestrian and bicycle accommodations and in planning the bicycle components of community transportation plans.

### Funding sources for bicycle and pedestrian accommodations

For additional information about these funding sources please reference the *Virginia Bicycle Facility Resource Guide*, available on VDOT's website. When seeking funding, the first and most important step is to get a facility on a local plan.

- Get the accommodation listed on a locally adopted bicycle and pedestrian plan, preferably as part of the comprehensive plan, when the plan is updated (generally every five years).
- If no local bicycle or pedestrian plan exists, provide encouragement for the creation and adoption of a local plan.
- If the accommodation is part of the public facilities improvements listed in the comprehensive plan, funding may be available through the locality's Capital Improvements Program.
- If the accommodation is already on a plan but has never been implemented, encourage the locality to fund the improvement. Matching funds in the form of

volunteer labor, donated material or equipment are great catalysts for facility development.

### Virginia Department of Transportation

- Highway Construction Funds
- Maintenance Funds (2 percent goal of budget to be used to pave shoulders)
- SAFETEA-LU Transportation Enhancement Program
- Congestion Mitigation and Air Quality Improvement (CMAQ) Funds
- Recreational Access Program
- Highway Safety Improvement Program
- Revenue Sharing Program
- Safe Routes to Schools

### Federal Highway Administration

- SAFETEA-LU Scenic Byways Program
- SAFETEA-LU Public Lands Highways Program
- SAFETEA-LU Transportation and Community System Preservation Program

### Virginia Department of Rail and Public Transportation

- SAFETEA-LU Transit Enhancement Program

### Links to Sample Plans

#### Alexandria Open Space Plan

Available online at <http://alexandriava.gov/recreation/general/OpenSpacehome.html>. Also see the Draft Transportation Plan, bicycle and pedestrian sections at [http://alexandriava.gov/tes/policy\\_and\\_program/draft\\_master\\_plan.html](http://alexandriava.gov/tes/policy_and_program/draft_master_plan.html).

#### City of Charlottesville Comprehensive Plan

See Chapter 6: Transportation, and Chapter 10: Community Facilities. Available online at [www.charlottesville.org/Index.aspx?page=1745](http://www.charlottesville.org/Index.aspx?page=1745).

#### Fairfax County

Review the organizational structure Fairfax County uses to oversee and implement bicycle and pedestrian projects at [www.fairfaxcounty.gov/NMTC](http://www.fairfaxcounty.gov/NMTC). For the Existing Trails Map go to [www.fairfaxcounty.gov/NMTC/maps.html](http://www.fairfaxcounty.gov/NMTC/maps.html).



## Resources

### American Trails

P.O. Box 491797  
Redding, CA 96049-1797  
(530) 547-2060  
[www.americantrails.org](http://www.americantrails.org)

### Appalachian Trail Conservancy

P.O. Box 807  
799 Washington Street  
Harpers Ferry, WV 25425-0807  
(304) 535-6331  
[www.appalachiantrail.org](http://www.appalachiantrail.org)

### Bikes Belong Coalition

P.O. Box 2359  
Boulder, Colorado 80306  
(303) 449-4893  
[bikesbelong.org](http://bikesbelong.org)

### BikeWalk Virginia

PO Box 203  
Williamsburg, VA 23187-0203  
(757) 229-0507  
[www.bikewalkvirginia.org](http://www.bikewalkvirginia.org)

### International Mountain Bicycling Association (IMBA)

207 Canyon - Suite 301  
Boulder, CO 80302  
(888) 442-4622  
[www.imba.com](http://www.imba.com)

### Rails to Trails Conservancy

1100 17th Street, NW 10th Floor  
Washington, D.C. 20036  
(202) 331-9696  
[www.railtrails.org](http://www.railtrails.org)

### Virginia Horse Council

P.O. Box 665  
Mineral, Virginia 23117  
(888) 467-7382

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- Federal Highway Administration. The Universal Trail Assessment Process. U.S. Department of Transportation. [www.fhwa.dot.gov/environment/sidewalk2/sidewalks213.htm](http://www.fhwa.dot.gov/environment/sidewalk2/sidewalks213.htm)
- Greenways and Trails. Creating Greenways: A Citizen's Guide. Massachusetts Department of Conservation and Recreation. [www.mass.gov/dcr/stewardship/greenway/creatinggreenways.htm](http://www.mass.gov/dcr/stewardship/greenway/creatinggreenways.htm).
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- Rivers, Trails and Conservation Assistance. Economic Impacts of Protecting Rivers, Trails, and Greenway Corridors. National Park Service. [www.nps.gov/pwro/rtca/econindx.htm](http://www.nps.gov/pwro/rtca/econindx.htm).